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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,865

01/21/2005

Dolf Henricus Josef Van Casteren

NL 020679

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24737

7590

07/25/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

ALEMU, EPHREM

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/521,865	<b>Applicant(s)</b> VAN CASTEREN, DOLF HENRICUS JOSEF	
	<b>Examiner</b> Ephrem Alemu	<b>Art Unit</b> 2821	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-19 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: a heading for each section of the specification is missing.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

**As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:**

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Objections***

2. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 19 have a duplicate claim recitation, which has been recited in claim 13.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14, 15, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are as follows:

(i) the input of the first flip-flop with respect to the driving circuit of claim 13 is missing in claim 14;

(ii) the structural relationship between the first triggerable timer device, first flip-flop device and second triggerable timer device with respect to the driving circuit of claim 13 is missing in claim 15; and

(iii) the structural relation ship between the “first and second XNOR devices and with respect to the driving circuit of claim 13 is missing in claim 17.

Claim 18 is rejected as being dependent over rejected claim 14.

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5. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, recites “a current detector having at least one output coupled to a reset input of the first flip-flop device” is indefinite. Is “a current detector” recited in claim 16 is different from the current detector recited in claim 13 and what or where is a reset input of the first flip-flop device?

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-10, 13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Shen (US 6,577,078).

Re claims 1, 2 and 3, Shen discloses driver (i.e., electronic ballast) for a gas discharge lamp (318) (Figs. 3, 4), comprising:

two input terminals (i.e., the two end nodes connecting capacitors C10 & C11 to which the output stage 308 is connected) for connection to a source of substantially DC voltage; two output terminals (i.e., the two terminals where discharge lamp 318 is connected) for connection to a gas discharge lamp (i.e., the two terminals where discharge lamp 318 is connected) (Figs. 3, 4);

an arrangement of two controllable switches (MOSFETs 210 or 310, 212 or 312) connected in series between the two input terminals (i.e., the two end nodes connecting capacitors C6 & C7 or C10 & C11 to which the output stage 208 or 308 is connected); an inductor (L2 or L3) connected in series with the two output terminals (i.e., the two terminals where discharge lamp 318 is connected), this series arrangement being coupled to a node between the two switches (MOSFETs 310, 312) (Figs. 3, 4);

a control unit (i.e., MOSFET driver circuit 314) having two control outputs coupled to provide control signals (signals 316) to the two controllable switches (MOSFETs 310, 312);

the control unit (i.e., MOSFET driver circuit 314) being designed to generate its control signals (signals 316) at relatively low-frequency commutation intervals and in relatively high frequency operational phases, such that during a first commutation interval a lamp circuit current has substantially only a first direction, while during a second commutation interval the lamp circuit current has substantially only a second direction opposite to the first direction, and such that during a second operational phase the lamp circuit current has a substantially continuously increasing level, while during a second operational phase the lamp circuit current has a substantially continuously decreasing level (Figs. 3, 4; Col. 3, lines 9-47; Col. 5, line 55- Col. 6, line 4);

wherein the control unit (i.e., MOSFET driver circuit 216 or 314) is designed to generate its control signals such that the two switches (MOSFETs 310, 312) are always switched substantially simultaneously in counter-phase (Figs. 2, 4; Col. 3, line 9- Col. 4, line 18; Col. 5, line 32- Col. 6, line 4; wherein the control unit (i.e., MOSFET driver circuit 314) is designed to generate its control signals (signals 217a, 217b or 316) such that: during the first commutation

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interval and the first operational phase, a first switch (210 or 310) coupled between the node (i.e., the connection point between switches 210 & 212 or 310 & 312) and a positive input terminal (i.e., the top end node connecting capacitor C6 or C10) is substantially conductive, while a second switch (212 or 312) coupled between the node (i.e., the connection point between switches 210 & 212 or 310 & 312) and a negative input terminal (i.e., the bottom end node connecting capacitor C7 or C11) is substantially non-conductive; during the first commutation interval and the second operational phase, the first switch is substantially non-conductive while the second switch (212 or 312) is substantially conductive; during the second commutation interval and the first operational phase the first switch (210 or 310) is substantially non-conductive while the second switch (212 or 312) is substantially conductive; during the second commutation interval and the second operational phase, the first switch (210 or 310) is substantially conductive while the second switch (212 or 312) is substantially non-conductive).

Re claims 4-7, Shen further describes controlling the switching time of the switches in a manner claimed in claims 4-7 (Figs. 3, 4; Col. 3, lines 9-47; Col. 5, line 55- Col. 6, line 4).

Re claim 8, Shen further discloses a zero crossing detector (T2 or T3) arranged to sense the lamp circuit current ( $i_{L3}$  or  $i_{L4}$ ) and to generate an output signal (330) indicative of the lamp circuit current ( $i_{L3}$  or  $i_{L4}$ ) crossing zero, the control unit (216 & 230 or 314 & 328) having an input coupled to receive the detector output signal (330) (Figs. 3, 4; Col. 4, lines 42-53; Col. 5, lines 47-58).

Re claim 9, Shen discloses an electronic ballast (Fig. 4) having a detector (i.e., transformer T2 or T3 including zero-current detection circuit 220 or 322) for sensing a current and for generating an output signal indicative of the current crossing zero, the detector

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comprising a transformer (T2 or T3) having a primary winding (i.e., the transformer T2 or T3 winding connected to the lamp 214 or 318) for receiving the current to be sensed and further comprising a secondary winding (i.e., the transformer T2 or T3 winding connected to the zero-current detection circuit 220 or 322) inductively coupled to the primary winding, the transformer (T2 or T3) being designed such as to be magnetically saturated already at a very low current saturation level (Col. 4; lines Col. 5, lines 39-67).

Re claim 10, as best understood, given Shen's detector (i.e., transformer T3 including zero-current detection circuit 322) being small saturable transformer (T3), the current saturation level being in the order of small current level is inherent for sensing the zero crossing of current  $i_{L3}$  (Fig. 4; Col. 5, lines 47-58).

Re claims 13 and 19, Shen further discloses driver (i.e., electronic ballast) for a gas discharge lamp (318) (Figs. 3, 4), comprising:

two input terminals (i.e., the two end nodes connecting capacitors C10 & C11 to which the output stage 308 is connected) for connection to a source of substantially DC voltage; two output terminals (i.e., the two terminals where discharge lamp 318 is connected) for connection to a gas discharge lamp (i.e., the two terminals where discharge lamp 318 is connected) (Figs. 3, 4);

an arrangement of two controllable switches (MOSFETs 210 or 310 & 212 or 312) connected in series between the two input terminals (i.e., the two end nodes connecting capacitors C6 & C7 or C10 & C11 to which the output stage 208 or 308 is connected); an inductor (L2 or L3) connected in series with the two output terminals (i.e., the two terminals



where discharge lamp 214 or 318 is connected), this series arrangement being coupled to a node between the two switches (MOSFETs 210 or 310 & 212 or 312);

a control unit (i.e., MOSFET driver circuit 216 or 314) having two control outputs coupled to provide control signals (signals 316) to the two controllable switches (MOSFETs 210 or 310 & 212 or 312);

the control unit (i.e., MOSFET driver circuit 216 or 314) being designed to generate its control signals (signals 316) at relatively low-frequency commutation intervals and in relatively high frequency operational phases, such that during a first commutation interval a lamp circuit current has substantially only a first direction, while during a second commutation interval the lamp circuit current has substantially only a second direction opposite to the first direction, and such that during a second operational phase the lamp circuit current has a substantially continuously increasing level, while during a second operational phase the lamp circuit current has a substantially continuously decreasing level (Figs. 2, 4; Col. 3, line 9- Col. 4, line 18; Col. 5, line 32- Col. 6, line 4);

wherein the control unit (i.e., MOSFET driver circuit 216 or 314) is designed to generate its control signals such that the two switches (MOSFETs 210, 212 or 310, 312) are always switched substantially simultaneously in counter-phase (Figs. 2, 4; Col. 3, line 9- Col. 4, line 18; Col. 5, line 32- Col. 6, line 4.

***Allowable Subject Matter***

8. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or suggest alone or in combination, the limitations: “a first diode having a first terminal coupled to a first end terminal of the secondary winding; a second diode having a first terminal coupled to a second end terminal of the secondary winding and having its second terminal connected to the second terminal of the first diode; a resistor having one terminal connected to the node between the two diodes and having its other terminal coupled to a central tap of the secondary winding” as claimed in claim 11.

Claim 12 is objected to as being dependent over claim 11.

#### ***Response to Arguments***

10. Applicant's arguments filed 4-24-06 have been fully considered but they are not persuasive. In response to applicant argument that Shen does not teach or suggest the two switches (61, 62) are always switched substantially simultaneously in counter-phase is respectfully disagreed. Shen clearly describes how the two switches (11 & 112 or 210 & 212) being switched substantially simultaneously in counter-phase (see Figs. 3, 4; Col. 3, lines 9-47; Col. 5, line 55- Col. 6, line 4).

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA  
7-23-06



**TUYET VO**  
**PRIMARY EXAMINER**